

**REMARKS**

No amendments are made to the claims and they are listed here only for convenience to the examiner:

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1. (previously presented) A personal digital assistant comprising:

a housing;

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a liquid crystal display panel for displaying information stored in the personal digital assistant;

a slot installed on a first side of the housing;

a first connector comprising a plurality of contacts installed on a second side of the housing for transmitting electric power and data; and

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a digital image capture device which is detachable from the personal digital assistant comprising:

an array of light sensors for capturing a two-dimensional image;

a latch for matching with the slot;

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a release button; and

a second connector corresponding to the first connector, the second connector comprising a plurality of corresponding contacts directly connected to the array of light sensors for transmitting data captured by the array of light sensors to the first connector.

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2. (original) The personal digital assistant of claim 1 wherein when the release button of the digital image capture device is pressed, the latch is moved to a release position.

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3. (original) The personal digital assistant of claim 1 further comprising a plurality of protruding plugs installed on a surface of the housing, and the digital image capture device further comprising a plurality of sockets corresponding to the protruding plugs of the personal digital assistant for precisely engaging with the personal digital assistant.
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4. (original) The personal digital assistant of claim 1 wherein the contacts of the first connector comprises fourteen pins, and the contacts of the second connector comprises fourteen receiving holes for matching with the corresponding pins of the first connector.
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5. (original) The personal digital assistant of claim 1 wherein the digital image capture device further comprises a switch for switching on or switching off the digital image capture device.
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6. (original) The personal digital assistant of claim 1 wherein the digital image capture device further comprises a base which is approximately perpendicular with the housing of the personal digital assistant for leaning on the personal digital assistant when the digital image capture device is connected to the personal digital assistant.
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7. (original) The personal digital assistant of claim 1 wherein the digital image capture device further comprises a movable lens unit which is capable of being adjusted to a predetermined position for capturing images.
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8. (original) The personal digital assistant of claim 7 wherein the lens unit is connected to the digital image capture device via a pivot.

5 9. (previously presented) A personal digital assistant comprising:

a first housing;

a liquid crystal display panel for displaying information stored in the personal digital assistant;

10 a slot installed on a first side of the first housing;

a first connector comprising a plurality of contacts installed on a second side of the first housing for transmitting electric power and data; and

15 a digital image capture device which is detachable from the personal digital assistant comprising:

a second housing;

an array of light sensors for capturing a two-dimensional image;

20 a lens unit which is movable for capturing images;

a pivot connected to the lens unit;

a latch for matching with the slot;

a base which is approximately perpendicular with the second housing;

25 a release button installed on the second housing;

and

30 a second connector corresponding to the first connector, the second connector comprising a plurality of corresponding contacts directly connected to the array of light sensors for transmitting data captured by the array of light sensors to the first connector.

10. (original) The personal digital assistant of claim 9 wherein when the release button of the digital image capture device is pressed, the latch is moved to a release position.

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11. (original) The personal digital assistant of claim 9 further comprising a plurality of protruding plugs installed on a surface of the first housing, and the digital image capture device further comprising a plurality of sockets corresponding to the protruding plugs of the personal digital assistant for precisely engaging with the personal digital assistant.

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12. (original) The personal digital assistant of claim 9 wherein the contacts of the first connector comprises fourteen pins, and the contacts of the second connector comprises fourteen receiving holes for matching with the corresponding pins of the first connector.

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13. (original) The personal digital assistant of claim 9 wherein the digital image capture device further comprises a switch for switching on or switching off the digital image capture device.

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14. (original) The personal digital assistant of claim 9 wherein the lens unit is connected to the digital image capture device via a pivot.

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1. Amendments to the disclosure:

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The specification is amended to correct the spacing errors identified by the examiner as well as other typographical

rrors discovered in a complete review of the as-filed copy. It is suspected that these errors are due to the electronic filing process. In addition, description for the proposed amendment to Fig.2c is included in paragraphs [0022] and [0032].  
5 A clean copy of the amended paragraphs is included with this reply.

No new matter is entered by these amendments and consideration of the amended paragraphs is politely  
10 requested.

**2. Proposed amendments to the drawings:**

An amendment to Fig.2c is proposed depicting an array of  
15 light sensors 40 as recited in claims 1 and 9. The only change made to Fig.2c is to remove a section of the housing of the capture module 20 to allow the array of light sensors 40 to be shown. Appropriate description is added to the specification. No new matter is entered. Support for these  
20 amendments is found throughout the original disclosure and, in particular, in paragraph [0038].

Consideration of the proposed amendment to Fig.2c and the corresponding amendments to the specification is respectfully  
25 requested.

**3. Rejection of claims 1-2, 5-6, 9-10, and 13 under 35 U.S.C. 103(a) as being unpatentable over Ketcham (US 6,195,589 B1) in view of Yerazunis et al. (US 6,477,588 B1):**

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Ketcham does not suggest capturing two-dimensional images and does not provide motivation for the above combination.

Ketcham teaches two applications with respect to the single photo detector 56: (1) uploading data from the computer 70 (Fig. 2, col.4 lines 39-45), and (2) reading the bar code 54 (Fig.3, col.4 lines 46-62). The applications are taught with relation to the single photo detector 56. Ketcham does not teach or suggest that these applications could be performed by a two-dimensional sensor, nor does Ketcham teach or suggest other applications that might be better performed by a two-dimensional sensor. Thus, the applicant respectfully contends that the examiner has used hindsight to arrive at the claimed invention for lack of motivation in Ketcham's disclosure.

Moreover, Yerazunis et al. does not teach or suggest uploading data from a computer or reading a bar code with the two-dimensional sensor 110. Rather, the sensor 110 is disclosed as being for JPEG or MPEG image capture. In the '588 patent there is no disclosed motivation for one of ordinary skill in the art to incorporate the hardware of Ketcham into the system of Yerazunis et al.

Thus, employing "an array of light sensors", as recited in claims 1 and 9, into Ketcham's device is not obvious and should be patentable over the above combination.

Reconsideration of claims 1-2, 5-6, 9-10, and 13 is politely requested. Claims 2, 5-6, 10, and 13 are dependent on claims 1 and 9 and should be allowed if claims 1 and 9 are allowed.

4. Rejection of claims 3 and 11 under 35 U.S.C. 103(a) as being unpatentable over Ketcham in view of Yerazunis et al., and further in view of Cha et al. (US 6,146,210):

Reconsideration of claims 3 and 11 is requested. Claims 3 and 11 are dependent on claims 1 and 9 respectively and should be allowed if claims 1 and 9 are allowed.

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5. Rejection of claims 4 and 12 under 35 U.S.C. 103(a) as being unpatentable over Ketcham in view of Yerazunis et al.

10 Reconsideration of claims 4 and 12 is requested. Claims 4 and 12 are dependent on claims 1 and 9 respectively and should be allowed if claims 1 and 9 are allowed.

15 6. Rejection of claims 7-8 and 14 under 35 U.S.C. 103(a) as being unpatentable over Ketcham in view of Yerazunis et al., and further in view of Kim (US 6,301,098):

20 Reconsideration of claims 7-8 and 14 is requested. Claims 7-8 and 14 are dependent on claims 1 and 9 respectively and should be allowed if claims 1 and 9 are allowed.

7. IDS of Taiwan Patent 385016:

Please find the PTO/SB/08 form attached.

25 The applicant wishes to make of record the document listed on the accompanying PTO/SB/08 form. It is requested that the examiner initial the cited reference on the form, that it be made of record in the application, and that a copy of the initialed form be sent to the applicant with the next  
30 communication from the examiner.

Taiwan Patent 385016 was cited in communications from the

Taiwan Intellectual Prop rty Office on N v. 25, 2002 with reference to the corresponding Taiwanese application. A concise explanation of the relevance of this patent to this application is as follows.

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Briefly, Taiwan Patent 385016 teaches a digital camera 100 comprising a photo-taking unit 200 and a removable photo-viewing unit 300. The photo-taking unit 200 and photo-viewing unit 300 function together when mechanically and electrically mated, and function independently when separated. Referring to Fig.5 (block diagram), the following components are indicated as part of the photo-taking unit 200: lens 10, lens driver 52, image driver 54, charge coupled device (CCD) 56, analog-digital converter (ADC) 58, image processor 60, transport group 62, reduced instruction set computer (RISC) 64, status LCD 66, DRAM 68, and flash memory 70. The photo-viewing unit 300 comprises: RISC 72, DRAM 74, flash memory 76, LCD 78, image output 80, and PC output 82.

20 Claims 1 and 9 have been previously amended to differentiate the present invention from Taiwan Patent 385016. Specifically, the contacts of the second connector are recited as being "directly connected to the array of light sensors for transmitting data captured by the array of light sensors to the first connector". These amendments are fully supported in the specification, such as in paragraphs [0032] and [0034]. No new matter is entered. In Taiwan Patent 385016, the contacts 21 of the photo-taking unit 200 (image capture device) are not directly connected to the CCD 56, but rather are connected through the RISC 64 and image processor 60. That is, the photo-taking unit 200 has onboard processing capabilities and is independently functional. In contrast, the direct



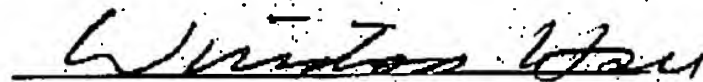
connection limitation of claims 1 and 9 prohibit such independent operation of the claimed image capture device.

Thus, the applicant proposes that the invention claimed in the amended claims 1 and 9 is substantially different from the teachings of Taiwan Patent 385016.

Reconsideration of the amended claims 1 and 9 and the accompanying IDS is requested.

Sincerely,

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**CLEAN COPY OF AMENDMENTS TO THE SPECIFICATION**

In paragraph [0022]:

- 5        Fig.2c is a cutaway top view of the digital image capture module of Fig.2.

In paragraph [0029]:

- 10        Please refer to Fig.1 for an illustration of a PDA 10, which is a portable digital electrical device, with memory, a display device, and an operating processor. The data, which is usually input by touching the panel with a handpen (not shown), is transformed into a digital form and stored in memory. The PDA
- 15        10 has a wide application and generally serves as an electrical book, an electrical notebook, or an electrical business card album. Of course, the PDA 10 can also interchange data with another PDA or a PC by wire or by a wireless transmission port.

- 20        In paragraph [0030]:

- As shown in Fig.1, the PDA 10 according to the present invention, comprises a housing 19, an LCD (liquid crystal display) panel 11, operating buttons 12, a handpen slot 13,
- 25        a pair of engaging slots 14, a first connector 15, a pair of protrusions 16, a switch 17, and an infrared transmitter 18. The LCD panel 11 occupies as large an area as possible of the housing 19 to better display results. Disposed on the same side of the housing 19 as the LCD panel 11, several operating
- 30        buttons 12 provide specific auxiliary operations, such as paging, executing a program, and cursor movement. The handpen is the most important input device. Therefore, there is the

handpen slot 13 disposed on the right-hand-side of the housing 19 and is used for safekeeping of the handpen when not in use. The switch 17 is used to turn on or off the PDA 10. The infrared transmitter 18 provides a wireless transmission function. The PDA 10, of course, can be assembled with other built-in transmission modules, such as a blue-tooth chip module or an IEEE 802.11 module.

In paragraph [0031]:

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The pair of engaging slots 14 is located on an end of the housing 19. The first connector 15 and the pair of protrusions 16 are formed on a second side of the housing 19. The first connector 15 as shown in Fig.1g, comprises 14 holes and serves as an electrical power and data transmitter. The first connector 15 can be used with a charger to charge the PDA's 10 built-in battery. Additionally, the PDA 10 can interchange digital information with a PC using the first connector 15. According to the present invention, the first connector 15 can also be used to connect the PDA 10 with a digital image capture device. Fig.1c illustrates that the first connector 15 forms an L-shaped socket on housing 19 to mate with a connector on the digital image capture module, fixing the capture module on the housing 19. The capture module and the connection of the capture module are described in more detail in the following paragraphs.

In paragraph [0032]:

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Fig.2 illustrates a structure of the capture module 20. The capture module 20 comprises a case 30, a movable lens unit 21, a pivot 22 between the lens unit 21 and the case 30, release

5 buttons 23 which are formed on a second side of the case 30, a pair of latches 24 which are mated with the engaging slots 14 of the PDA 10, a second connector 25 which is mated with first connector 15 of the PDA 10, a pair of sockets 26, a switch 27, a chassis 28, and a flash unit 29. Fig.2c is a cutaway view that shows the capture module 20 further comprising an array of light sensors 40, which can be a well-known charge-coupled device (CCD) or the like. The existing PDA 10 comprises a computer and a wireless communication function. 10 Therefore, the PDA 10, when combined with the capture module 20, can serve as a digital camera in a videoconference. During a videoconference, the LCD panel 11 and the image capturing lens unit 21 should point in the same direction, allowing two-way visual communication via a wireless communication 15 transmission. This is why the present invention comprises an apparatus allowing the position of the lens unit 21 to be adjusted.

20 In paragraph [0033]:

Shown as in Fig.2, the lens unit 21, connected to the main frame of the case 30 by way of pivot 22, will rotate from 0 degrees to 180 degrees allowing the lens unit 21 to point in the same direction as the LCD panel 11. The direction of lens 25 unit 21 can be further adjusted by repositioning the PDA 10.

In paragraph [0034]:

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The most obvious difference between the capture module 20 and an ordinary digital camera is that the capture module 20 does not comprise memory or a display panel. Therefore, the capture module 20 does not contain a digital image capturing

function until connected to the PDA 10. The above combination uses the PDA's 10 built-in drive program. The LCD panel 11 will serve as a display panel and the image captured by the above combination will be stored in memory. The other parts of the capture module 20, such as the flash unit 29, all perform the same purpose as those in a conventional digital camera.

In paragraph [0035]:

10 The capture module's 20 second connector 25 has 14 pins and mates with the first connector 15 of the PDA 10. The second connector 25 and the first connector 15 are used to transmit electrical power or data. The pair of sockets 26 on the case 30 is mated with the protrusions 16 disposed on the second side of the housing 19, so the case 30 can be accurately positioned on the housing 19. When users attach the capture module 20 to the PDA 10, the L-shaped movable latches 24 will enter the engaging slots 14 and the capture module 20 will fix onto the PDA 10. When users want to remove the capture module 20 from the PDA 10, pressing the release buttons 23 will move the latches 24 to a release position, allowing easy removal of the capture module 20 from the PDA 10.

In paragraph [0036]:

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The capture module 20 can be turned on or off by the switch 27. Of course, the PDA's 10 operating system needs a built-in drive program or a plug-and-play model for the capture module 20 to function.

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In paragraph [0037]:

It is worthwhile to notice that the capture module 20 comprises a chassis 28 that is approximately perpendicular to the capture module's 20 main frame and is used to cradle the PDA 10. Thus, the capture module 20 will combine with the PDA 10 more completely and the user will feel the combination easier to operate. Of course, the PDA 10 also contains a built-in plug-and-play drive program. When the capture module 20 is plugged into the PDA 10, the PDA's 10 drive program will operate the capture module's 20 digital image capturing function and display a captured image on the LCD panel 11.

In paragraph [0038]:

Fig.3 illustrates an assembled state diagram according to the present invention. The combination of the PDA 10 and the capture module 20 is used exactly the same way as using a digital camera. A digital image signal captured by the capture module 20 is transmitted to the PDA 10 through a connection between the first connector 15 and the second connector 25. This signal is shown on the LCD panel 11 and directly stored into memory. Fig.4 illustrates another assembled state diagram according to the present invention. The rotation of the lens unit 21 can be adjusted through the PDA's 10 position and can also be set to a specified angle. As shown in Fig.4, the lens unit 21 has been rotated exactly 180 degrees. In this configuration, the LCD panel 11 and the image capturing lens unit 21 point in the same direction allowing two-way visual communication via a wireless communication transmission.